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## CASE STUDIES

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“Case Studies” presents a case pertinent to contemporary issues and events in investment management. Insightful and provocative questions are posed at the end of each case to challenge the reader. Each case is an invitation to the critical thinking and pragmatic problem solving that are so fundamental to the practice of investment management.

*Jack L. Treynor, Senior Editor*



### Answers to Quiz for Fed Candidates

*Do you think that “money matters?” How would you measure the degree of monetary ease or restraint?*

Although the scarcity of money is measured by the nominal overnight rate, the reward to consumers for delaying their consumption is measured by the real overnight rate—the nominal rate less inflation.

But when consumers are responsive, albeit with some lags and uncertainties, to the real rate, the Fed controls the level of domestic demand. The main concern for policy makers then becomes, not increasing the level of demand, but rather increasing the level the country can afford.

*How well would the US economy function under hyperinflation?*

If consumers respond to the real rate then, when it chooses the nominal rate, the Fed must allow for inflation. But the nominal rate determines how expensive money is to hold, therefore to use.

Specialization is the whole point of cities. But transactions between specialties require money. So, as it becomes more urbanized, hence more specialized, the United States has progressively less tolerance for high inflation rates, and even less for hyperinflation.

Urbanization	
Year	Percent of population in agriculture
1790	0.967
1820	0.80
1860	0.67
1929	0.25
1980	0.04

*What are the main limits on the sustainable level of prosperity? True or False: Inflation results from a failure to invest in home goods plant*

True. When domestic demand increases, home goods producers respond by activating an obsolete plant. But employers can afford to use their obsolete plant only at higher real prices. When workers attempt to recapture in money wages the resulting increase in money prices, inflation accelerates.

Moral: when inflation prevents policy makers from expanding domestic demand to the full employment level, the missing jobs must be provided by new home goods plant. But because investment in home goods plant does not improve the trade balance, it cannot reward the foreign investor. So the investment that relaxes the inflation constraint must be financed by local savings.

*True or false: Trade deficits result from a failure to invest in tradables plant*

True. Trade deficits are another obstacle to full employment. The problem is that, although an increase in domestic demand increases local output of home goods, it does not increase local output of tradable goods. However, foreign investors *can* justify investment in tradable goods plant—provided the currency is not too strong. That is good news, because it improves the trade balance.

*What is the primary lesson from the great panics of the last two centuries? What do they tell us about demand failure?*

Thanks to Sidney Homer, we have nominal interest rates before, during, and after the seven great panics. By this measure, money was tight in all seven. But if they were caused by tight money, the panics are not examples of the sort of spontaneous, self-reinforcing collapse of business confidence textbook writers call “demand failure.”

US commercial paper rates.\*

Panic year	Two years before	Year before	Panic year	Year after	Two years after
1837	1000	3600	3200	1800	3600
1857	1500	1200	2400	750	704
1873	1003	1162	1650	744	661
1893	583	550	1088	348	475
1907	675	721	733	670	598
1921	588	813	788	500	538
1929	425	563	625	488	400

All figures are averages for the highest month in the indicated year.

\**A History of Interest Rates*, Sidney Homer

*Explain the significance of the term premium? Estimate its size.*

The term premium compensates investors for the extra risk they incur by holding long maturities rather than short. But why, if there is a borrower for every lender, hence no net contribution to the riskiness of the market portfolio, should investors require any risk premium from long bonds? The answer lies in the correlation of long bonds with systematic risk in common stocks.

Over the life of the long Treasury bond, the average value of short rates must be neutral—reflecting neither ease nor restraint. But then the difference between the long rate and the neutral short rate reduces to two elements: the term premium and any inflation differential.

*To other countries, the United States is an independent economic entity. How should they determine whether we are pulling our weight?*

If we choose to view the United States as a stand-alone business, buying and selling with the rest of the world, one useful measure is our *operating cash flow*—what our trade balance would be if we were not making substantial investments intended to benefit our *future* cash flows. Taking a leaf from corporate accountants, we can “capitalize” these investments, adding them back to the trade balance.

Needless to say, foreign lenders to the United States hope that our investments will improve future operating cash flows enough to pay them back.

*Estimate what it costs the private sector to create one job: \$5,000? \$50,000? \$500,000?*

Consider an historical interval with the special property that the identity of the marginal plant was the same at the end as at the beginning. Because, at the end of the interval, the number of jobs

provided by old plant will be the same as at the beginning, any increase will be due entirely to new plant. By dividing the incremental jobs by the incremental dollars (gross private capital formation), we get a crude estimate of the cost of one job. It is obviously an average across a wide variety of investments.

To minimize sample error, we want the longest possible period for measuring the respective increments in jobs and investment. But, by the end of long time samples, the original marginal plant has usually been retired. So it is not easy to find periods with the special property. Limited evidence suggests that a new job costs \$500,000.

*True or false: In contributing to the volume of our country's output, labor and capital are substitutes for each other*

False. It is a rare economics textbook that does not have a handsome graph demonstrating how various proportions of capital and labor can produce the same output. In industry, however, labor and capital are complements—not substitutes. Putting more people to work takes more machines. The explanation for chronic joblessness is machinelessness.

*How would you go about calculating the effect of an increase in domestic demand on the trade balance?*

Consumers buy two kinds of goods: tradable goods and home goods. An increase in domestic demand will be partly tradable goods and partly home goods. The latter will increase domestic output and employment. The former will degrade the trade balance.

*Define liquidity trap. Explain why the concept is important to the Fed.*

In fairness to the textbook writers, let us concede that liquidity traps are a species of demand failure.

But it is a kind of demand failure in which, although money matters as much as ever, the real rate is out of the Fed's control.

The real interest rate is the algebraic difference between the nominal rate and inflation. So, when inflation is negative, the real rate is the sum of the absolute value of inflation and the nominal rate. And although the nominal rate falls when the velocity of money falls, there is no velocity so low that the nominal rate can be negative.

If inflation gets too negative, even the easiest monetary policy can result in real interest rates high enough to slow the economy. But then inflation may get even more negative. This is the "trap" in a liquidity trap.

*Discuss the impact of the spot inflation rate on the long Treasury rate. Assume that the US economy is at least partly open*

The spot inflation rate is a weighted average of the home goods and tradable goods inflation rates. Because the worker's market basket contains both home goods and tradable goods, both rates influence inflation in his money wage. But, although the money wage influences home goods prices, it does not influence tradables prices. So, barring new information, tradables inflation will tend over time to dominate home goods inflation. But investors in the long Treasuries cannot foresee new information. So the yield on long Treasuries will *also* be dominated by tradables inflation—unlike the spot inflation rate.

### **Special difficulty—double points**

*Explain how the value of the dollar is determined in a pure float (as distinguished from a dirty float, or flexible exchange rates). Assume that the US economy is at least partly open and that interest-rate parity holds*

In a pure float, the value of the currency will not be changing. But then the forward value will be the same as the spot. If interest-rate parity holds, the domestic (nominal, short) rate must equal the foreign (nominal, short) rate.

For every possible value of the currency there will be a different local price of tradable goods—hence a

different velocity of money, given the money stock. But the nominal short interest rate is determined by the velocity of money. The value of the dollar will be the one value for which the resulting velocity is consistent with the short rate determined by interest-rate parity.

*Rudiger Dornbush*